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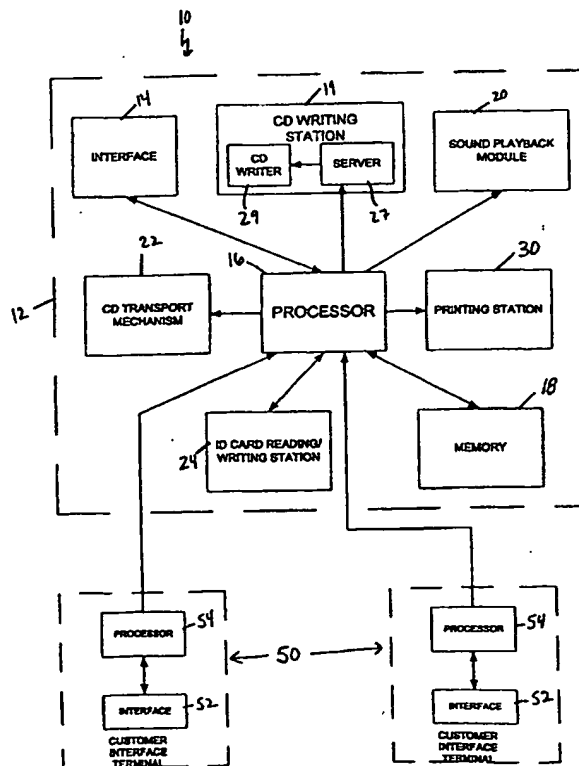
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06F 15/00, 17/30		(11) International Publication Number: WO 00/49509
A1		(43) International Publication Date: 24 August 2000 (24.08.00)
(21) International Application Number: PCT/US00/04139		(74) Agents: YANNEY, Pierre, R. et al.; Darby & Darby P.C., 805 Third Avenue, New York, NY 10022-7513 (US).
(22) International Filing Date: 16 February 2000 (16.02.00)		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(30) Priority Data: 09/251,631 17 February 1999 (17.02.99) US		Published <i>With international search report.</i>
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 09/251,631 (CON) Filed on 17 February 1999 (17.02.99)		
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(54) Title: **SYSTEM FOR STORING USER-SPECIFIED DIGITAL DATA ONTO A DIGITAL MEDIUM**

(57) Abstract

A system (10) is disclosed which is operative to transfer userspecified digital data selections, such as musical selections, to a digital data storage device. The system is preferably housed in a terminal or other suitable housing, and includes a user interface (52), such as a touch screen, for interacting with customers to gather customer-entered information (50). The system includes a memory (18) which, for example, stores digital sound files corresponding to songs available through the system. A digital data transfer station is also provided to transfer sound data from the selected sound data files to the digital storage device. A processor (16) is coupled to the memory, interface, and digital data transfer station and controls the process.



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5 **SYSTEM FOR STORING USER-SPECIFIED DIGITAL DATA**
 ONTO A DIGITAL MEDIUM

BACKGROUND OF THE INVENTION

10 **Field of the Invention**

 This invention relates to storage devices for digitally storing data. More particularly, the invention relates to a system which transfers user-specified digital data selections, such as music selections, to a digital storage and playback device, such as an MP3 player.

15

Description of the Related Art

 Currently, data is stored digitally in connection with many different applications. However, until recently, audio data was not stored digitally, but rather was stored in analog format on records, magnetic tapes, and the like. Recently, with
20 the advent of compact disks and the accompanying compact disk players, audio data, in addition to other forms of data, can be stored digitally and subsequently retrieved. The compact disk player reads the digital data contained on the compact disk via a "read laser", the digital data is converted into an analog signal, is amplified, and
 played through one or more audio speakers, all of which is well known in the art.

25 Conventional digitization of an analog audio signal is performed by electronic circuits that sample the analog signal about 40,000 times a second. These electronic circuits convert the strength of the signal at each of the samplings into a corresponding digital representation, which is then stored as digital sound data.

 More recently, others have developed compression techniques for
30 compressing such digital audio data, while substantially maintaining the quality of the

5 playback. One well-known form of such compression is commonly referred to as MP3, or MPEG layer 3, format. This compression format compresses audio files to approximately one twelfth of their original size. Thus, a significant amount of digital audio data can be stored in a smaller memory utilizing this technique, without a significant loss in playback quality.

Digital storage and playback of audio data has a number of benefits over magnetic audio tapes, records, and other conventional audio data storage formats. Because the data is in digital format, the data can be transferred identically, without any loss of data. In addition, because the data is stored digitally, the data does not become distorted over time, and therefore it may be accessed a virtually unlimited number of times.

15 While digital sound files have a number of benefits, many people do not have access to the files. A number of such files are available over computer networks such as the Internet, and can be downloaded for future playback. However, a person must own or have access to a computer in order to retrieve such files.

Accordingly, it will be apparent that there continues to be a need for a system for accessing and transferring digital data files to a customer, where the data files correspond to the selections made by a particular customer. In addition, the need exists for a system which is easily accessible, and which does not require a computer or other similar device in order to gain access to the data files. The present invention addresses these needs.

Summary of the Invention

25 Briefly, and in general terms, the present invention provides a system for transferring user-specified digital data, such as musical selections, video, data, or software to a digital data storage device. The digital data storage device may then be used in a player device, for example, a portable player for playing back the stored data. The system is preferably housed in a terminal or other suitable housing, and includes an interactive interface, for example a touch screen or a keypad and display,

for interacting with customers. The system includes memory which stores digital files corresponding to songs (or other data files) that the system offers. In one embodiment, a digital data transfer station is also provided to receive the digital data storage device and to transfer selected digital data (such as sound data) to the storage
5 device. A processor is coupled to the memory, interface, and digital data transfer station and controls the process. Thus, a customer may select, through the interactive interface, one or more songs (or other data files), with the processor then retrieving the corresponding data files from memory in order for the digital data transfer station to transfer the data to the storage device.

10 In another illustrative embodiment, the system includes a communication interface configured to engage a communication line, such as a parallel port adapter coupled to a suitable multi-pin cable for the transmission, in a parallel fashion, of data to a suitable digital data storage and playback device, such as an MP3 player.

15 In yet another illustrative embodiment, the system includes one central (or main) terminal which physically houses the memory in which the audio data files are stored, as well as the digital data transfer station. The main terminal is in communication with one or more customer interface terminals (i.e., "dumb" terminals), each of which includes an interface to allow a customer to select various
20 data files for delivery, but which does not include the memory or digital data transfer station. The customer interface terminals forward the selection information input by a customer to the central terminal. The download or transfer of the selected data files to the digital data storage device is then carried out at the main terminal. In this manner, the system provides more than one site for a customer to make selections, without
25 requiring a digital data transfer station and memory for storage of all the data files at each of the separate terminals. Alternatively, all of the data files may be stored at the main terminal and only selected data files are transmitted from the main terminal to the customer interface terminal for download to the storage device or playback device.

In another embodiment, the system receives the customer's selections,

and then generates an identification card and provides the card to the customer. The customer can then return some time after placing the order and insert the identification card into the system. The system receives the card, determines the corresponding digital data storage device, retrieves that storage device, and provides the storage
5 device to the customer.

In yet another embodiment, the system includes one or more directional speakers for playing samples of the audio selections. The customer may select one or more songs, or portions thereof, to be played, with the processor retrieving a sound file from memory and transmitting the file to the directional
10 speakers, which result in the sound being directed toward the customer, either directly or by way of reflection, so that others in the area are not distracted by the sound bites as they are played.

Thus, in one illustrative embodiment, the present invention is directed to a system for processing customer-selected data selections and for transferring the
15 data selections to a digital storage device, including: a housing; an interactive interface connected to the housing and responsive to entry of customer-entered information to generate corresponding electrical signals; a memory contained in the housing, the memory storing data files; a subsystem for transferring selected data to the digital storage device; and a processor in communication with the memory and
20 subsystem, and responsive to receipt of the signals from the interface to access the memory and retrieve corresponding data files, and transmit the files to the subsystem to transfer the data to the digital storage device.

Description of the Drawings

25 Other objects, features and advantages of the invention discussed in the above summary of the invention will be more clearly understood from the following detailed description of preferred embodiments, which are illustrative only, when taken together with the accompanying drawings in which:

Fig. 1 is a block diagram of components included in a system for

creating compact disks illustrating one embodiment of the present invention;

Fig. 2 is a flow chart depicting the operational flow of the system shown in Fig. 1;

Fig. 3 is a block diagram of components included in another
5 illustrative embodiment of the invention;

Fig. 4 is a schematic view of a disk transport mechanism included in one illustrative embodiment of the invention;

Fig. 5 is a schematic view of a jewel case holding and dispensing system included in one illustrative embodiment of the invention;

10 Fig. 6 is a perspective view of one embodiment of a housing incorporated in the system of the present invention; and

Fig. 7 is a block diagram of components included in yet another illustrative embodiment of the invention.

15 Detailed Description of the Preferred Embodiments

Referring now primarily to FIG. 1, there is shown a system 10, according to one illustrative embodiment of the invention, for creating compact disks based upon musical selections made by customers who interact with the system. While the embodiments of the invention are described by way of example
20 to a system in which musical selections are recorded onto a CD, the present selection is also applicable to the selection and recording of other types of media, such as video, data, and software. In the illustrative embodiment, the system 10 includes a main terminal 12 which is designed for interaction with a customer to determine the selections desired by the customer. The main terminal includes a user
25 interface 14, preferably a graphical user interface, which allows the user to enter information into the terminal. The terminal further includes a processor 16, memory 18, a CD writing station 19, and optionally, a sound playback module 20, a CD transport mechanism 22, and an ID card reader/writer 24. The processor is programmed to control the various components of the system in response to

receiving customer-entered data from the user interface 14 to create a user-specified CD based on the data entered by the customer.

The processor 16 is preferably a programmed logic controller (PLC) which is programmed to control the various stations and components of the system 10 to form a compact disk from a standard, blank disk. The function of the processor 16 is described in greater detail below in connection with the flowchart shown in Fig. 2.

The system 10 includes, in one illustrative embodiment, a housing 25 (FIG. 6) which houses the various components of the system 10. The housing is preferably in the form of an upright cabinet, which includes an opening 26 into which the interface 14 is mounted. The cabinet also preferably includes one or more openings 28 for discharging completed compact disks and jewel cases, as is described in greater detail below.

The interface 14 is preferably a touch screen, which is divided into a plurality of screen portions corresponding to different selections available to a customer. For example, the touch screen may initially present a customer with different types of music, or a scrollable list of available songs (by artist or by title), or any other suitable selections, all of which are controlled by the processor 16, as is well known in the art. When the customer selects a particular option (by contacting the touch screen over the portion of the screen corresponding to the desired option), the processor 16 displays the next screen in a predetermined sequence of screens. For example, the touch screen may originally display different types of music. In response to selection of one type of music, the touch screen displays the available songs for that category of music. The customer then selects one or more of the songs, and the selections are recorded by the processor 16.

Alternatively, the interface 14 may include a conventional display and a keypad or plurality of keys which may be used by the customer to make various selections, with the screen being displayed being dependent upon the customer-entered information. For example, in response to the customer depressing a key

corresponding to a "Popular Music" icon on the display, the interface will next display a list of available popular music selections, from which the customer may select one or more by pressing the appropriate keys.

In one illustrative embodiment, the memory 18 may be in the form of
5 cache memory, RAM memory, disk subsystem memory, optical media, and/or tape
and remote storage devices that can be accessed by the processor 16 as needed. The
memory stores, among other things, the audio data files in digital format, with each
file having an identifying header as is well known in the art, for retrieval by the
processor, as is described in greater detail below. The memory may also store other
10 types of files, such as video, data, etc., depending on the particular application.

The digital data (or CD) writing station 19 is electrically connected to
the processor 16 for communication of digital data therebetween. The CD writing
station may include, for example, a server 27, which is connected to a digital data
(or CD) writer 29 which, in turn, may be integrated in a conventional disk
15 transporter (not shown) to automate disk loading. Such disk transporters
automatically select a disk onto which the customer's selections are to be recorded,
e.g., from the input stack magazine, and places the disk in the open drawer of the
disk writer, as is well known in the art. When the disk writing operation is
completed, the disk is moved to the output stack magazine and another destination
20 disk (i.e., customer disk) is automatically loaded for continuous production flow.
One suitable such disk transporter is the KODAK Disc Transporter, manufactured
by the Eastman Kodak Company, of Rochester, New York. Such disk transporters
typically include a standard mechanical interface for the KODAK PCD Writer 600,
which may also be incorporated in the present invention. Suitable CD writers
25 include 8X writers, such as those widely available from Sanyo Corporation and
PlexTor.

As described above, the system 10 of the present invention is suitable
for creating disks containing any type of digital data, such as CD-ROMs, DVD
disks, recordable CD's, and the like. Thus, the system may include a DVD writer

or recordable CD writer in addition to (or in lieu of) the CD writer 29. Thus, the writer 29 may be a CD writer, DVD writer, or any other well known writer designed to write digital data onto a disk. In addition, as used herein, the term "compact disk" is intended to refer to CD's, DVDs, and other disks that contain digital data.

The system 10 also preferably includes a printing station 30, which prints information and/or graphics onto the disk surface. The printing station includes a printer 32, which in one illustrative embodiment is a thermal transfer printer. One suitable thermal transfer printer is the Perfect Image CD Printer manufactured by Rimage Corporation, of Minneapolis, Minnesota. Alternatively, an inkjet printer or other suitable printer may be used to label the compact disks. Further details regarding such thermal transfer printers which may be used in the system according to the present invention may be found in an article in CD-ROM Professional, September 1996, at pages 86-90, which is incorporated herein by reference. A laser printer (not shown) may also be included in the printing station (e.g., an HP LaserJet 5MP) to print the invoice (or receipt) and jewel box insert. The printing station receives the necessary data from the processor 16. The information printed onto the CD and/or insert may include the customer's name, musical selections, associated graphics, or any other type of information. In one illustrative embodiment, the laser printer may use pre-printed, fan fold stock, which is perforated. Thus, one part of the stock is used for the jewel case insert, and the other part is used to print a customer receipt.

The system 10 preferably includes the sound playback module 20, which is controlled by the processor to play all or part of a song for a customer. For example, the interface 14 may display a list of songs which are stored in memory 18 and can be played by the system. The customer may select one or more of the songs, with the processor 16 then retrieving the corresponding sound bite file from memory 18 and forwarding the sound bite data to the sound playback module. The module includes a digital-to-analog converter 36 for converting the digital

sound bite data into an analog signal, an amplifier 38, and one or more speakers 40 to audibly play the sound bite (FIG. 3). The speakers are preferably directional speakers designed to focus the sound in one direction. The directional speakers may include parabolic housings surrounding the speaker, or may be specially constructed speakers designed to substantially prevent sound waves from traveling in more than one direction from the speaker, an example of which is disclosed in U.S. Patent Number 4,326,275, the disclosure of which is hereby expressly incorporated by reference. According to one aspect of the present invention, the directional speakers may be pointed upward, at an angle, so that the sound reflects off the ceiling down to the location where a customer would be typically standing, effectively concentrating the sound in that area, without disturbing others in adjacent areas.

Referring to FIGS. 1 and 4, the system 10 preferably includes the CD transport mechanism 22, which is controlled by the processor 16 to move a compact disk between the various stations of the system 10. The transport mechanism preferably includes a generally horizontal track 40 along which a disk transporter 42 rides. The transporter includes a vertically displaceable arm 44 including a specially configured lower end designed to releasably grab a compact disk. The arm is controlled by the processor to be displaced between upper (or retracted) and lower (or extended) positions. Thus, the transporter may be moved into alignment with a spindle of blank disks 46, with the arm 44 being lowered to engage the upper blank disk and lift the top disk off of the spindle. The transporter is then driven into alignment with the CD writing station 19, and the arm 44 is lowered to place the blank disk on the writing station. The audio data is written on the disk, and the arm 44 then grabs the disk and moves it to the printing station 30, where the disk is printed. The arm then grabs the disk and moves it to a drop point (shown as a retractable tray 47 which may be extended out of the housing to allow access to the finished disk by the customer). It will be apparent that the drop point can take many different forms, such as a chute which terminates outside of the housing, or any

other suitable structure which extends outside of the housing 25 and is therefore accessible by the customer. The recorded CD, jewel case and inserts may be dispensed to the customer so that the customer can manually combine them into the finished product.

5 Referring to FIG. 1, the system 10 in one preferred embodiment includes the ID card reader/writer 24, which may be a magnetic card reader/writer, smart card reader/writer, or any other suitable reader/writer, all of which are well known in the art. In the event a customer selects a relatively large number of songs, for example, more than ten, the system 10 will require at least several minutes to
10 create the compact disk. By providing the ID card reader/writer, the customer does not have to wait by the system 10 until the compact disk is finished. According to this aspect of the invention, a unique identification number may, for example, be coded as very low level noise in the first seconds of silence before the first track on the compact disk. For example, the identification data may be stored inside a
15 special format, fixed-size frame and written as audio data. The frame begins with a 16-bit word with the two least significant bits set (e.g., value=3), and followed by words where only the least significant bit is used to store the next bit of serialized identification data. This sequence is repeated a number of times (which, given the frame size, translates to slightly more than 1 second of "silence"). Using only the
20 low bit ensures that the result is inaudible. Alternatively, in lieu of dispensing a card identifying the user's recorded CD, the system may provide the user with an ID number, which is displayed on the screen. Later, when the user returns to the system to retrieve the recorded CD, he/she merely enters the ID number to have the recorded CD dispensed to them.

25 The same identification data encoded on the compact disk is also transmitted by the processor 16 to the ID card reader/writer 24, and is transferred to an ID card. The ID card is then dispensed to the customer through an opening in the housing 25 in any conventional manner (e.g., by a card ejecting mechanism similar to those used in Automated Teller Machines (ATMs) or the like). After a

period of time has passed, the compact disk is completed, and is stored in any suitable fashion inside of the housing 25. Then, when the customer returns, he or she may insert the ID card into the provided opening in the housing 25. The card is then read by the reader/writer, and the identification data is transmitted to the processor 16. The corresponding compact disk may be identified in many different ways. In one embodiment, the processor may generate an association (or look-up) table, linking the identification data with a particular storage location (e.g., the Nth compact disk on a stack of completed disks). Thus, when the identification data is received, the processor accesses the association table, determines the storage location of the corresponding compact disk, and retrieves that disk (e.g., by using the CD transport mechanism 22) and dispenses it to the customer. Alternatively, the compact disks may be retrieved one at a time, loaded in a suitable CD reader, and the first portion of the CD is read and compared with the identification data on the ID card. If there is a match, the CD is dispensed to the customer, via the CD transport mechanism 24 or some other such device. Alternatively, the system may include a standard CD changer mechanism (not shown), such that when the match is found, the platform carrying the CD is extended outwardly from the housing 25 to allow the customer to remove the CD.

The ID card generated by the system 10 can be a multi-use card, and can include additional information, such as the number of purchases made by the customer. Each time the customer purchases a CD and inserts his or her card, the data corresponding to the number of purchases can be updated. In this manner, discounts and other promotions can be offered to repeat customers.

Referring to FIG. 1, in one illustrative embodiment the system 10 includes the main terminal 12, and a plurality of customer interface terminals 50 (or "dumb" terminals), each of which is in communication with the main terminal. Each customer interface terminal includes an interface 52, preferably a touch screen, and a processor 54 programmed to control the presentation on the touch screen, and to collect customer-entered information and transmit the information to

the processor 16 of the main terminal 12. Thus, such a system provides a number of locations from which a customer can view the available musical selections and make his or her selections. At the same time, the system is efficient and economical due to the fact that it only requires a single centralized memory storing the audio files, a single CD writing station, and a single printing station. The "dumb" terminals preferably contain a relatively small amount of memory, which stores the screen presentation data, and a buffer to temporarily store the customer-entered information prior to forwarding the information to the processor 16. Alternatively, the customer interface terminal may be included as part of the system 10 for a complete, stand-alone system.

Alternatively, the customer interface terminals 50 may include a buffer memory for receiving selected data files from the main terminal 12. In this embodiment, the customer makes selections at one of the customer interface terminals, and corresponding signals are transmitted to the main terminal, which retrieves from its memory the corresponding data files. Those files are then transmitted to the customer interface terminal, where they are transferred to an appropriate data storage device, as is described in greater detail below.

Referring to FIG. 5, the system 10 may also include, inside of the housing 25, a container 60 containing a stack of jewel boxes 62 which are spring loaded by one or more springs 61 to be biased in an upward direction. A movable piston or arm 64 may be provided to drive the upper jewel box off of the top of the stack and through one of the openings 28 formed in the housing 25 to allow dispensing of the jewel box to the customer.

Referring now to FIG. 2, the operation of the system 10 in creating a compact disk is described in greater detail. Initially, at step 100, the customer (or user) makes his or her selections through the interface 14. For example, the customer may select one or more songs to be recorded onto his or her CD. The process is controlled by the processor 16, with the customer-entered information being stored in memory 18. Then, at step 102, the processor 16 determines whether

the customer has selected, through the interface, to hear one or more sound clips. If so, operation proceeds to step 104, and the processor retrieves the corresponding sound clip from memory 18 and forwards the sound clip to the sound playback module 20, and the retrieved clip(s) is played. Operation then proceeds to step 106.

5 If, at step 102, the customer has not selected to hear any sound clips, operation proceeds directly to step 106, and the processor 16 determines whether the customer is finished making selections, which is typically done by determining whether the customer has pressed a corresponding portion of the touch screen or a key on the housing to indicate that he or she has completed making selections. If
10 that portion of the touch screen (or the key) has not been activated, then operation proceeds back to step 100, and the customer can make additional selections. If, on the other hand, the customer has indicated that they have completed making selections, operation instead proceeds to step 108, and the processor reviews the customer-entered information to determine the songs selected by the customer. The
15 processor then accesses the memory 18 and retrieves the appropriate sound files.

Operation flows to step 110, and the processor 16 controls the CD transport mechanism, or some other suitable mechanism, to retrieve a standard, blank disk and to place the disk in the CD writer 29. At the same time, the processor causes the sound file data to be transmitted to the CD writer, which then
20 writes the data onto the disk. The CD may then be removed from the CD writer by the CD transport mechanism and placed in the printing station 30 to print the upper surface of the CD with some preselected graphics.

At step 112, the finished CD is dispensed to the customer in any suitable fashion. In one embodiment, the CD transport mechanism removes the CD
25 from the printing station 30 and places the disk on the extendable CD tray 47 (FIG. 4), which is then controlled by the processor 16 to be extended from the housing for access by the customer. Operation then terminates.

Referring now to FIG. 7, there is shown a system 200 according to another illustrative embodiment of the invention. The system includes a processor

202, an interactive interface 204, a digital data transfer station 206, a memory 208, and, optionally, a sound playback module 210 and ID card reading/writing station 212. The interface, memory, sound playback module, and ID card reading/writing station function in much the same way as the corresponding components included in
5 the system shown in FIG. 1. The system 200 is preferably housed in a terminal similar to the terminal 25 shown in FIG. 6.

The digital data transfer station 206 transfers digital data to a suitable digital data storage device, and includes an interface 214, a data transfer device 216, or both. The interface 214 is preferably a parallel port, for example, a 15-pin port
10 or a port similar to the D-Type 25-pin female connector on a standard PC. The parallel port is configured for engagement to a parallel port adapter of a multi-pin cable which leads to the digital data storage and playback device to provide for the parallel transmission of data from the system to the digital data storage device.

In one embodiment, the interface 214 is designed to communicate
15 with an MP3 player, such as the Rio PMP300 player available from Diamond Multimedia, which includes a 15-pin cable and parallel port adapter. The adapter is connected to the parallel port of the system, such that the MP3 player receives data through the 15-pin cable, compresses the incoming audio data using appropriate control software, and stores the compressed data on a flash memory card, or
20 alternatively in a chip. The compressed data can be retrieved later, decompressed by the player's control software, converted back into an analog signal, and played to the user through a speaker.

In one illustrative embodiment, the terminal in which the system 200 is housed includes a slot (e.g., a slot similar to a PCMCIA slot in palmtops,
25 personal digital assistants, and other handheld devices) to receive a flash memory card, and the data transfer device 216 includes a flash memory writer located at a predetermined location within the terminal to accept a card inserted through the slot. The flash memory writer is configured to establish electrical communication with the flash memory card, and operative to transfer compressed data to the flash

memory card. In this embodiment, the data transfer device preferably includes control software which compresses the digital sound data into the appropriate format, for example, into MP3 format. Once the compressed data is transferred to the flash memory card, the card may be removed from the data transfer device and
5 inserted into the MP3 player for future playback of the compressed audio data. Alternatively, the data may be transferred or played back without the use of compression/decompression.

The use of the system 200 is similar to that of the system 10, which is described above. A customer makes selections via the interactive interface 204,
10 with the processor 202 determining the corresponding data files to retrieve. In a system which includes the data transfer device 216, the customer may insert a flash memory card, or other suitable digital data storage device, into the terminal through an appropriate slot, which is received by the data transfer device. The processor then accesses the memory 208 and retrieves those files selected by the customer.
15 The data is then transmitted to the data transfer device, which optionally compresses or formats the data into the appropriate format and transfers the compressed data to the flash memory card for storage. The data transfer device then dispenses the flash memory card to the customer.

In the case of a system 200 which includes the interface 214, the
20 customer connects the port adapter, which leads to a digital data storage and playback device (such as the MP3 player), to the interface. The processor then retrieves the data from the memory, and transmits the data through the interface and to the digital data storage and playback device, preferably in parallel fashion. The device then stores the data for subsequent retrieval and playback. In the case of an
25 MP3 player, the data is compressed by the player and stored in the flash memory of the player.

It will be understood that the interface 214 may alternatively be a serial port or any other suitable port which is operative to transfer digital data to the digital data storage device.

It will also be understood that while compression of the digital data is performed in one illustrative embodiment, the digital data may simply be transferred to the storage device without any compression or other formatting.

The system 200 may also include a transport mechanism (not shown),
5 similar to the transport mechanism 22 shown in FIG. 4. The transport mechanism is designed to retrieve an unused flash memory card from a stack of such cards, and to transport the card to the data transfer device 216 where the selected data is then transferred onto the card. The transport mechanism then removes the card from the data transfer device and dispenses the card to the customer through a slot or other
10 opening in the terminal, as described above in connection with the system 10.

From the foregoing, it will be apparent to those skilled in the art that the present invention provides a system for processing user-entered information and for transferring user-selected data files to a digital storage and playback device.

Having thus described preferred embodiments of the present
15 invention, it is to be understood that the above described arrangement and system is merely illustrative of the principles of the present invention, and that other arrangements and systems may be devised by those skilled in the art without departing from the spirit and scope of the invention as claimed below.

WHAT IS CLAIMED IS:

- 1 1. A system for processing customer-selected data selections and
2 for transferring the data selections to a digital data storage device, the system
3 comprising:
4 at least one main terminal comprising an interactive user interface,
5 and a processor responsive to receipt of customer-entered information from the
6 interface to generate corresponding signals;
7 the main terminal further comprising:
8 a memory for storing data files;
9 means for transferring data to the digital storage device; and
10 a processor in communication with the memory and means for
11 transferring, and responsive to receipt of the signals from the terminal to access the
12 memory and retrieve corresponding data files, and transmit the files to the interface
13 for transfer of the selected data files to the digital storage device.
- 1 2. The system of claim 1, wherein the data files include at least
2 one of audio files and video files.
- 1 3. The system of claim 1, wherein the means for transferring
2 comprises an interface in the form of a parallel port which communicates with the
3 digital storage device via a parallel connector and cable.
- 1 4. The system of claim 1, wherein the means for transferring
2 comprises a digital data transferring device that is configured to receive a digital
3 storage device and to establish electrical communication therewith to transfer the
4 data to the digital storage device.

1 5. The system of claim 1, wherein the user interface comprises a
2 touch screen.

1 6. The system of claim 1, further including a plurality of customer
2 interface terminals, each of which is in communication with the main terminal.

1 7. The system of claim 2, further including a sound playback
2 module in communication with the processor and operative to play selected sound
3 bites.

1 8. The system of claim 7, wherein the sound playback module
2 comprises directional speakers.

1 9. The system of claim 1, wherein the digital storage device
2 comprises a flash memory card.

1 10. The system of claim 1, wherein the digital storage device
2 comprises a recordable compact disk.

1 11. The system of claim 6, wherein each customer interface
2 terminal comprises a means for transferring data to a digital storage device, and a
3 memory for storing selected data files transmitted from the main terminal, wherein
4 the memory and means for transferring are electrically connected for communication
5 therebetween.

1 12. The system of claim 9, further comprising a mechanism
2 disposed within the housing for storing a plurality of unused flash memory cards,
3 and means for a) retrieving a flash memory card from the mechanism, b) delivering
4 the card to the means for transferring for the transfer of selected data files to the
5 card, and c) dispensing the card to a user.

1 13. A system for processing customer-selected data selections and
2 for transferring the data selections to a digital storage device, the system
3 comprising:
4 a housing;
5 an interactive interface connected to the housing and responsive to
6 entry of customer-entered information to generate corresponding signals;
7 a memory contained in the housing for storing data files;
8 a digital data transfer device configured to receive a digital storage
9 device and to establish electrical communication therewith to transfer the data to the
10 digital storage device;
11 a processor in communication with the memory and digital data
12 transfer device, and responsive to receipt of the signals from the interface to access
13 the memory and retrieve corresponding data files, and to transmit the files to the
14 digital data transfer device for transferring the data to the digital storage device; and
15 an identification card reading/writing station disposed in the housing
16 and in communication with the processor, the card reading/writing station being
17 controlled by the processor to generate a card containing identification data linking
18 the card to a corresponding storage device being processed by the digital data
19 transfer device, the card reading/writing station being responsive to receipt of a card
20 to read the identification data and transmit the data to the processor, wherein the
21 processor is programmed to identify the corresponding storage device.

1 14. The system of claim 13, wherein the data files include at least
2 one of audio data and video data.

1 15. The system of claim 13, wherein the customer interface
2 comprises a touch screen.

1 16. The system of claim 13, further including a sound playback
2 module in communication with the processor and operative to play selected sound
3 bites.

1 17. The system of claim 13, wherein the digital storage device
2 comprises a flash memory card.

1 18. The system of claim 13, wherein the digital storage device
2 comprises a recordable compact disk.

1 19. The system of claim 17, further comprising a mechanism
2 disposed within the housing for storing a plurality of unused flash memory cards,
3 and means for a) retrieving a flash memory card from the mechanism, b) delivering
4 the card to the means for transferring for the transfer of selected data files to the
5 card, and c) dispensing the card to a user.

1 20. A system for processing customer-selected data selections and
2 for transferring the data selections to a digital storage device, the system
3 comprising:

4 a main terminal defining a housing;

5 an interactive interface connected to the housing and responsive to
6 entry of customer-entered information to generate corresponding electrical signals;

7 a memory contained in the housing for storing data files;

8 means for transferring selected data to the digital storage device; and
9 a processor in communication with the memory and means for
10 transferring, and responsive to receipt of the signals from the interface to access the
11 memory and retrieve corresponding data files, and transmit the files to the means
12 for transferring to transfer the data to the digital storage device.

1 21. The system of claim 20, wherein the means for transferring
2 comprises a digital data transfer device configured to receive a digital storage device
3 and to establish electrical communication therewith to transfer the data to the digital
4 storage device.

1 22. The system of claim 20, wherein the means for transferring
2 comprises an interface that is configured to engage a communication line for the
3 transfer of data to the digital storage device.

1 23. The system of claim 22, wherein the interface comprises a
2 parallel port.

1 24. The system of claim 20, wherein the interface comprises a
2 touch screen.

1 25. The system of claim 20, further including a plurality of
2 customer interface terminals, each of which is in communication with the main
3 terminal.

1 26. The system of claim 20, wherein the data files comprise at
2 least one of audio data and video data.

1 27. The system of claim 20, further including a sound playback
2 module in communication with the processor and operative to play selected sound
3 bites.

1 28. The system of claim 27, wherein the sound playback module
2 comprises directional speakers.

1 29. The system of claim 20, further including an ID card
2 reader/writer operative to generate an ID card associated with a digital data storage
3 device to which data is being transmitted.

1 30. The system of claim 20, wherein the digital storage device
2 comprises a flash memory card.

1 31. The system of claim 20, wherein the digital storage device
2 comprises a recordable compact disk.

1 32. The system of claim 30, further comprising a mechanism
2 disposed within the housing for storing a plurality of unused flash memory cards,
3 and means for a) retrieving a flash memory card from the mechanism, b) delivering
4 the card to the means for transferring for the transfer of selected data files to the
5 card, and c) dispensing the card to a user.

FIG. 1

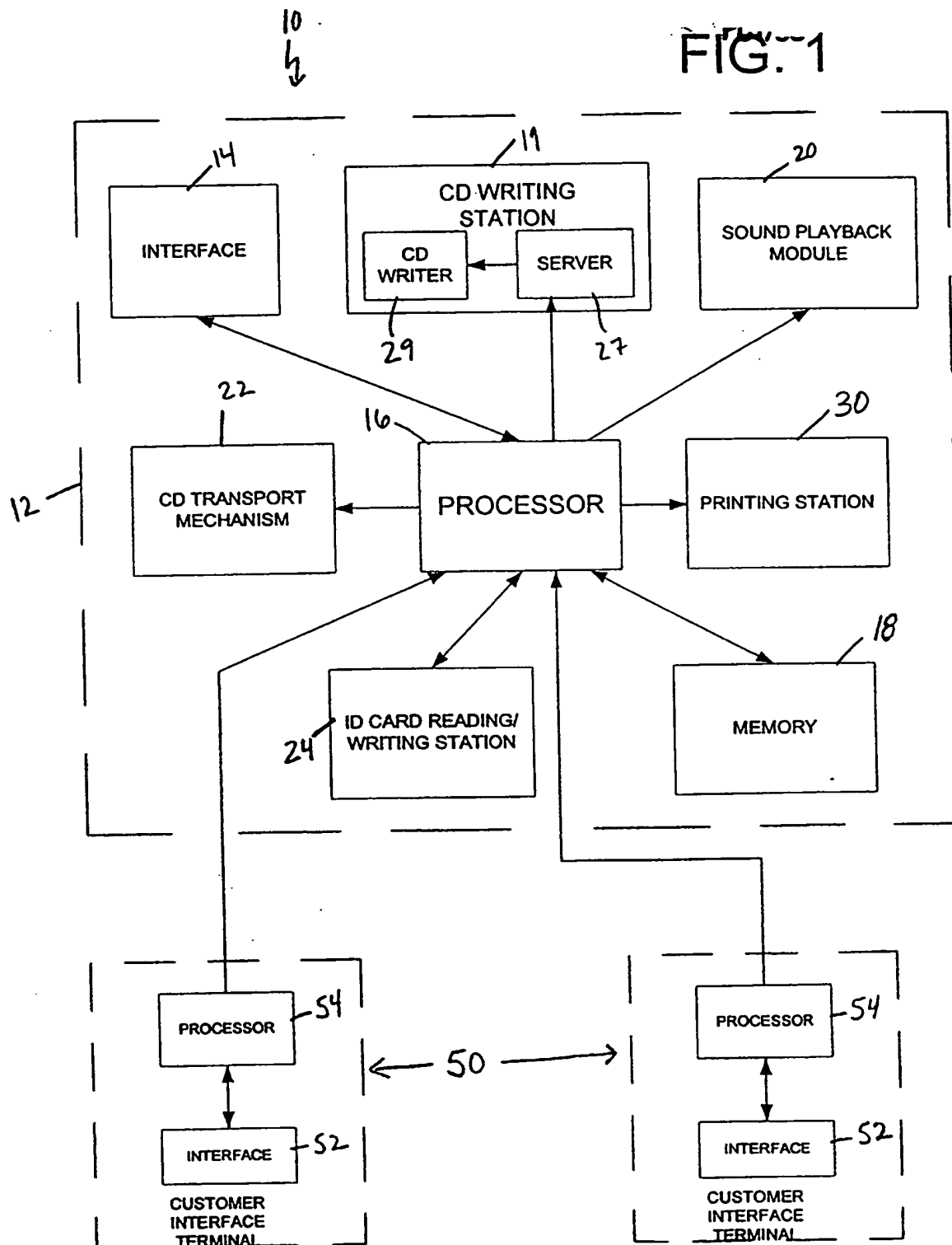
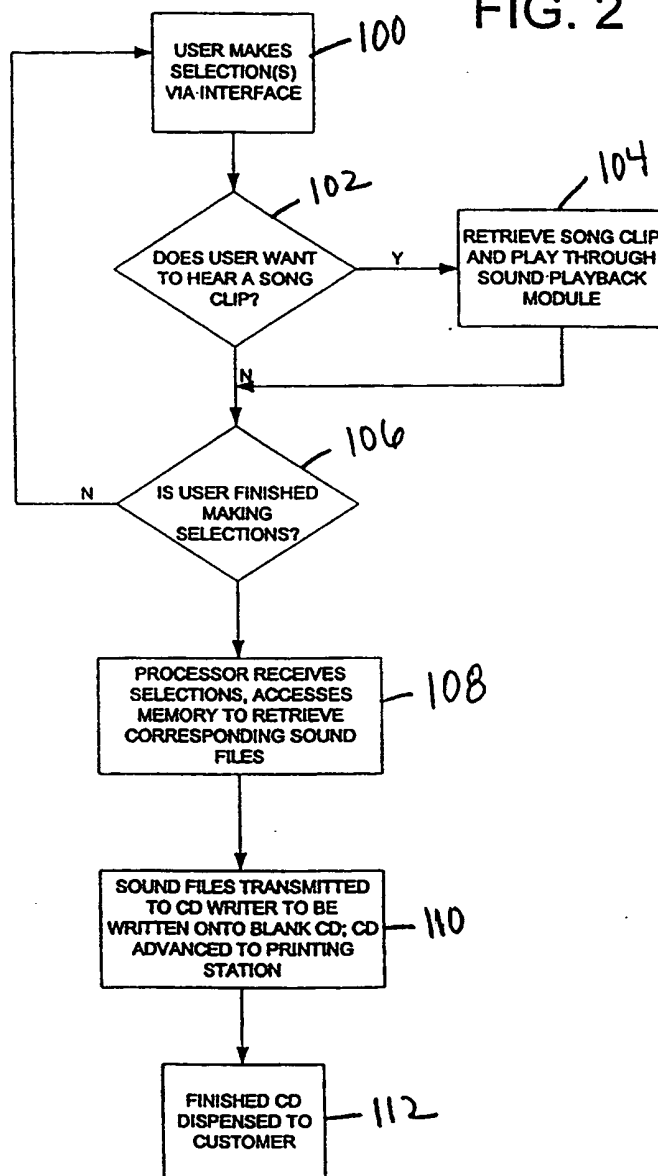


FIG. 2



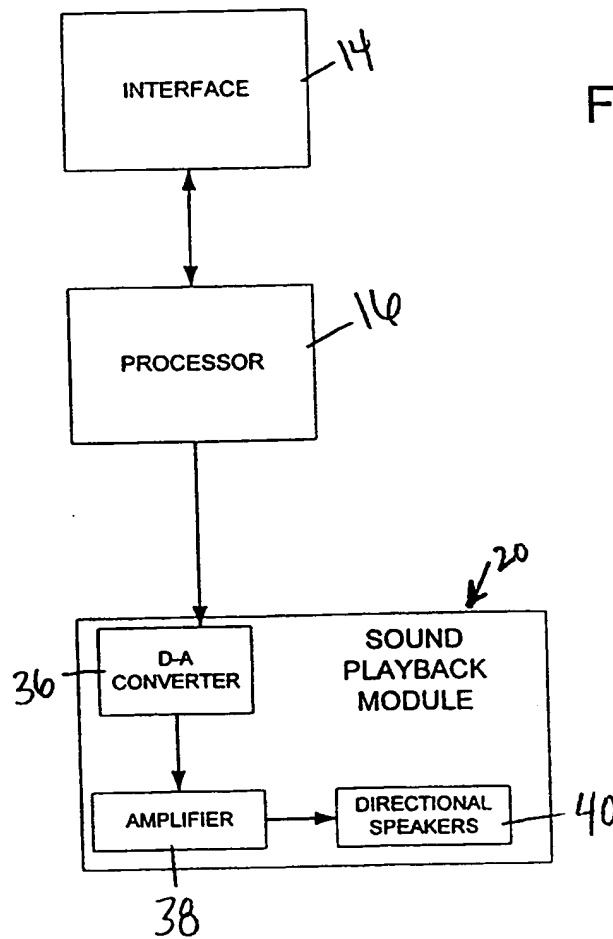
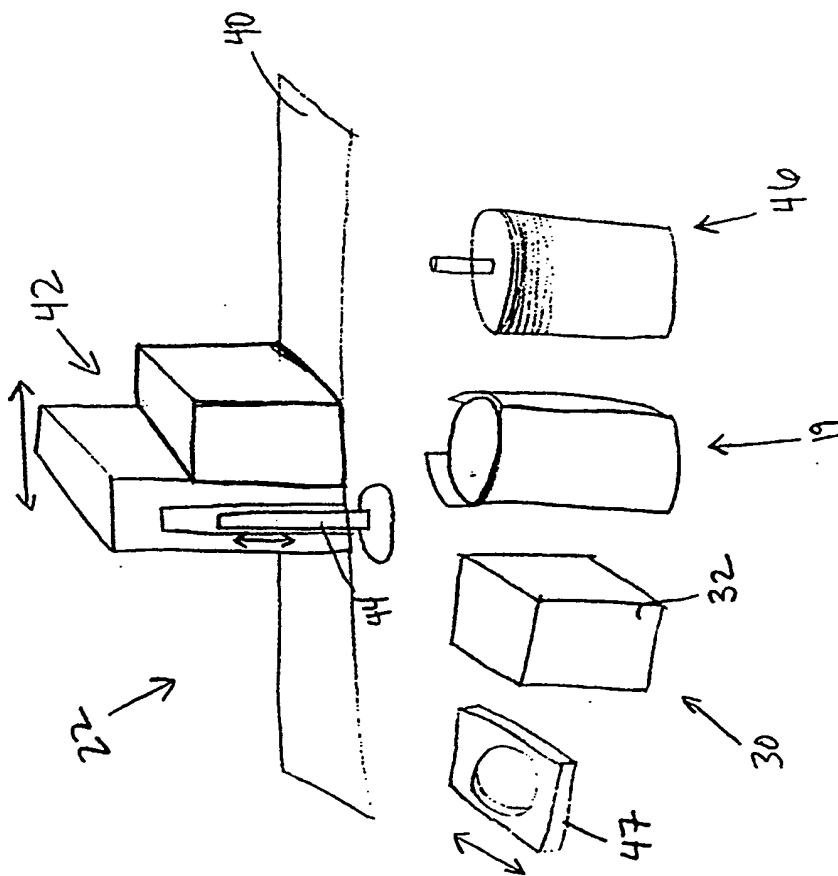
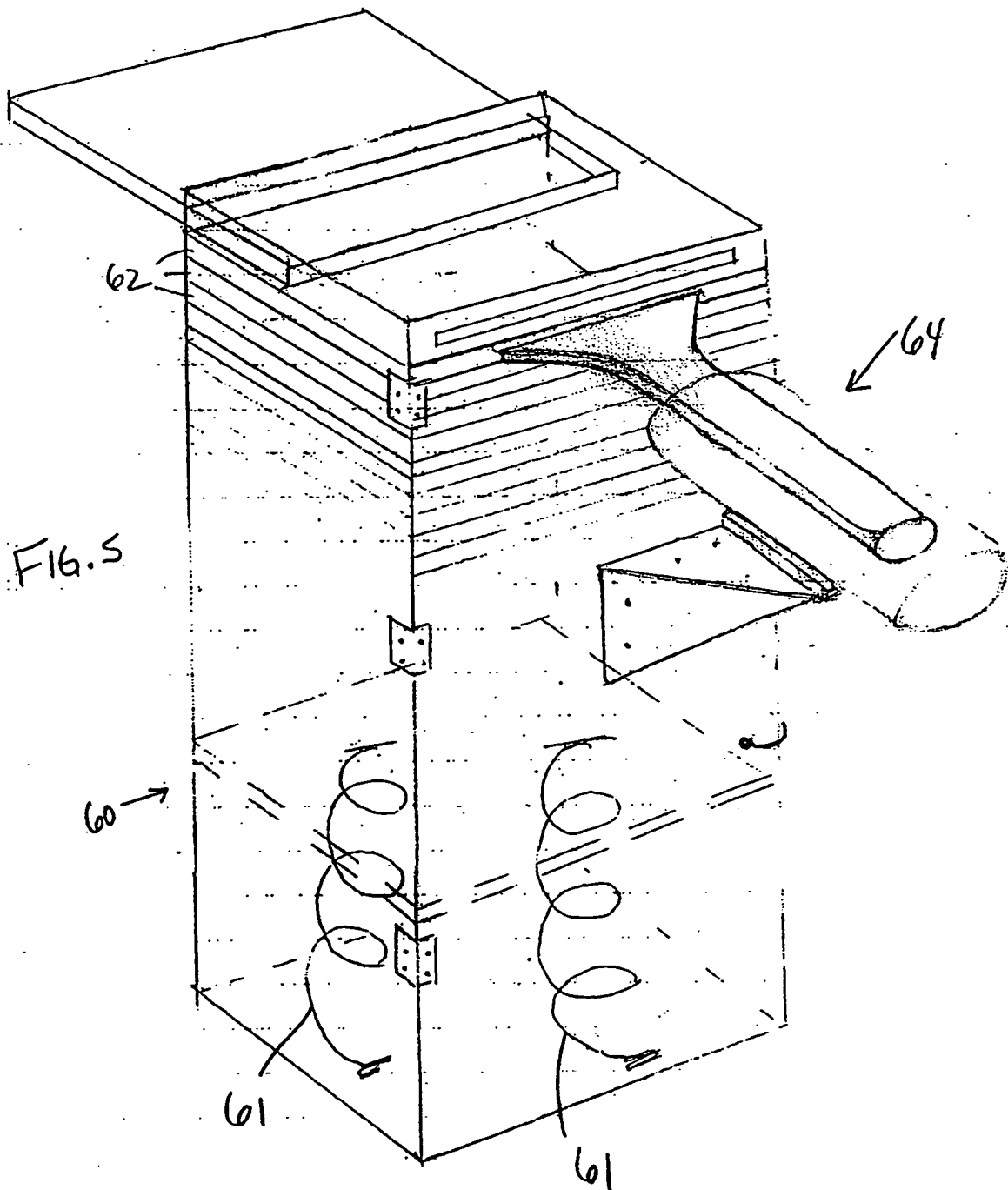


FIG. 4





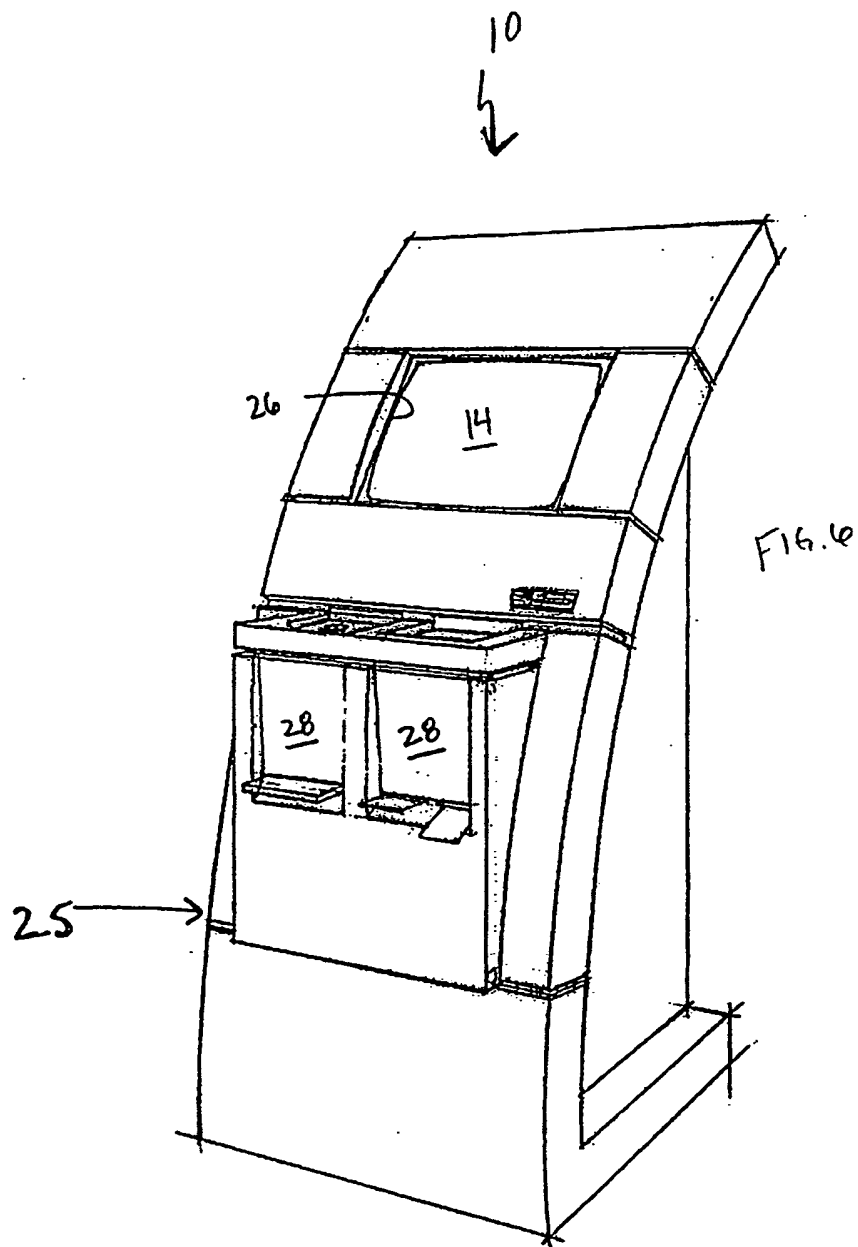
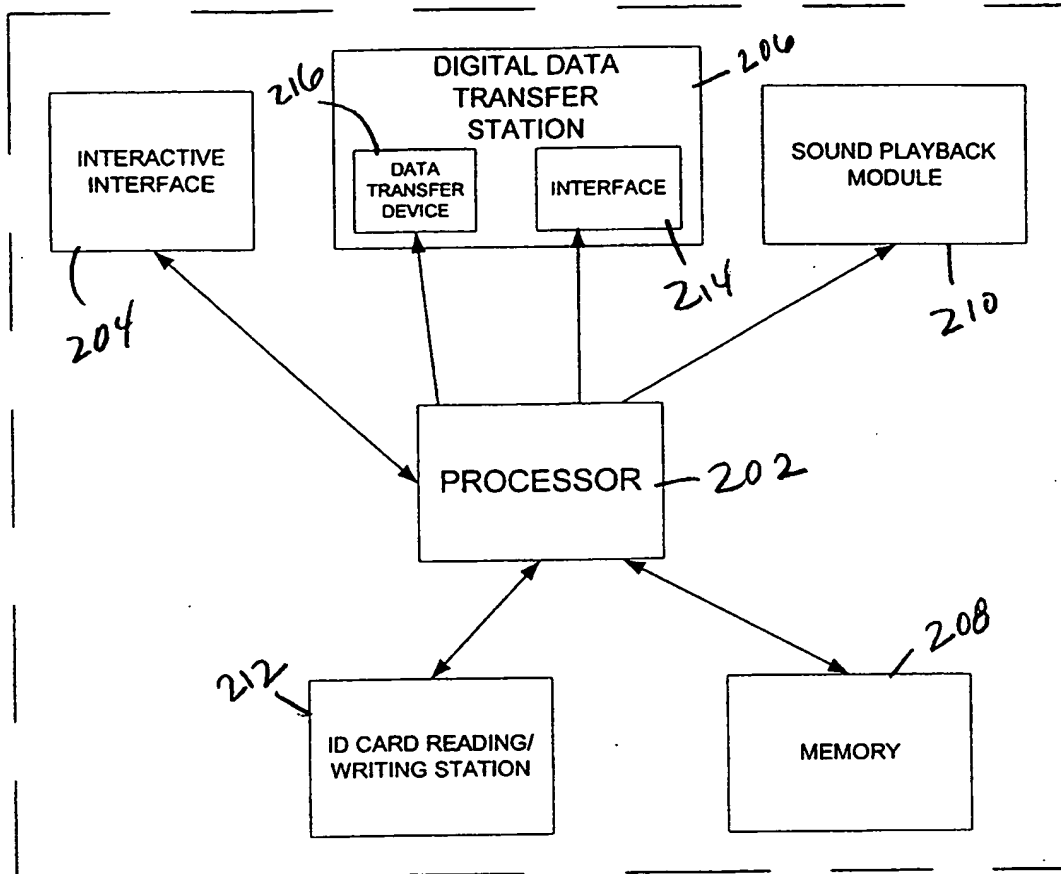


FIG. 7



INTERNATIONAL SEARCH REPORT

 International application No.
 PCT/US00/04139

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : US CL 463/44; 704/270, 707/1, 707/104.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST, EAST

USER, INTERFACE, CORRESPOND, SIGNAL, DIGITAL STORAGE, ELECTRICAL CONNECTOR.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,432,067 A (NIELSEN) 14 FEBRUARY 1984 (14.02.84) col. 1, lines 20-68; col. 2, lines 1-61.	1-32
Y	US 5,839,108 A (DABERKO et al.) 17 NOVEMBER 1998 (17.11.98) col. 1, lines 23-67; col. 2, lines 1-54	1-32
Y	US 5,675,778 A (JONES) 07 OCTOBER 1997 (07.10.97) col. 1, lines 19-67; col. 2, lines 1-50; col. 4, lines 7-65.	1-32



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
C document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

07 APRIL 2000

Date of mailing of the international search report

04 MAY 2000

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/04139

A. CLASSIFICATION OF SUBJECT MATTER:

IPC(7) G06F 15/00; 17/30

A. CLASSIFICATION OF SUBJECT MATTER:

US CL 463/44; 704/270; 707/1, 104

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